

Giant coronary cameral fistula with coarctation of aorta in a neonate

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ABSTRACT

A coronary cameral fistula (CCF) involves a sizable communication between a coronary artery and a cardiac chamber. We present a case of giant coronary cameral fistula associated with coarctation of aorta in a 13 days old neonate.

Keywords: Coarctation of aorta, Coronary cameral fistula

A coronary cameral fistula (CCF) involves a sizable communication between a coronary artery and a chamber of the heart. A 13-day-old male baby presented with feeding and breathing difficulty. The physical examination showed heart rate was 140/min and regular. Femoral artery pulsations were feeble. Respiratory distress and tachypnea were noted. Chest X-ray showed mild cardiomegaly, with features of increased pulmonary blood flow. Electrocardiogram (ECG) showed biventricular hypertrophy with sinus rhythm and no features of ischemia. Transthoracic echocardiogram showed a discrete coarctation of aorta and patent ductus arteriosus with bidirectional shunt. In addition, a large coronary artery to right ventricle (RV) fistula was seen at the apex with the left anterior descending (LAD) artery measuring 1 cm in diameter at its origin. Left ventricular ejection fraction was 50%. The findings were confirmed by computed tomography (CT) which showed a large aneurysmal LAD that formed a giant aneurysm just before its termination into the RV [Figure 1a and b]. The baby underwent coarctation repair through a lateral thoracotomy; resection of the coarctation segment with end-to-end anastomosis of the aorta was performed. The reason to approach the coarctation from the left side was because that it was felt from the CT images that apical

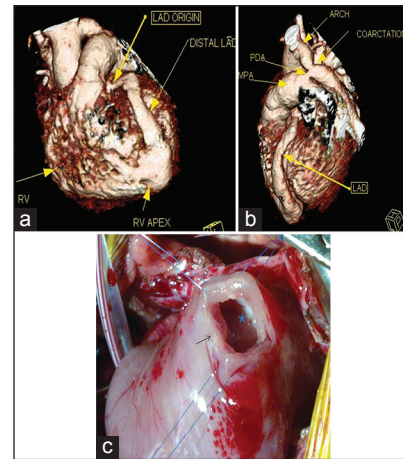


Figure 1: (a) 3D reconstructed CT images showing dilated LAD and distal coronary cameral fistula to RV. (b) 3D reconstructed CT image showing the association of the coronary cameral fistula with the coarctation of aorta (with posterior shelf) and PDA. (c) Surgical image showing the opened up dilated distal LAD (marked with arrow), also showing the opening of the RV from the opened up artery (marked with star). 3D = Three-dimensional, CT = Computed tomography, LAD = Left anterior descending, RV = Right ventricle, PDA = Patent ductus arteriosus, MPA = Main pulmonary artery

fistula could be accessed and ligated without use of cardiopulmonary bypass. However, at inspection, after opening the pericardium from the side, this was not found to be possible and a midline approach was subsequently utilized. Through a median sternotomy, on cardiopulmonary bypass and cardioplegic arrest, the fistulous sac was opened at the RV apex. Both the openings of fistula into the RV and the terminal end of the LAD closed with separate autologous pericardial patches [Figure 1c]. The fistula was so large that a double patch was required to secure a watertight

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closure. Finally, the sac was closed to cover up the suture lines. Echocardiography at discharge, showed well opened aortic arch, normal flow in the coronaries, and no residual leak at the site of the CCF.

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